

AMENDMENT TO THE CLAIMS

Please **AMEND** claims 1, 11, 14, 17 and 18; and

Please **ADD** claims 28 and 29 as follows.

A copy of all pending claims and a status of the claims is provided below.

1. (Currently Amended) A package divert mechanism, comprising:

a frame adapted for use with an existing conveyor system for transporting an item in an original direction, said frame including a frame entrance and a plurality of frame exits;

at least one of the frame exits being perpendicular to the frame entrance; and

a moveable diverting mechanism extending from the frame, the moveable diverting mechanism being movable substantially perpendicular to the original direction of travel of the item being transported on the existing conveyor system and diverting the item in either a first direction or a second opposing direction with respect to the first direction,

wherein the movable diverting mechanism is capable of remaining in a static position allowing the item to pass through the package divert mechanism while moving along the original direction.

2. (Previously Presented) The package divert mechanism of claim 1, wherein:

the moveable diverting mechanism is a bi-directional moveable diverting mechanism; and

the first direction and the second opposing direction are both substantially perpendicular to the original direction of travel of the item.

3. (Previously Presented) The package divert mechanism of claim 1, wherein the moveable diverting mechanism is configured to remain stationary so that the item can pass therethrough.

4. (Previously Presented) The package divert mechanism of claim 1, wherein the moveable diverting mechanism includes a downward extending blade having a first surface adapted for diverting the item and a longitudinal axis, the first and second surfaces facing opposing directions substantially perpendicular to the original direction of travel of the item and the longitudinal axis being substantially parallel to the original direction of travel of the item.

5. (Original) The package divert mechanism of claim 1, wherein the moveable diverting mechanism further includes a moving mechanism for moving the moveable diverting mechanism.

6. (Original) The package divert mechanism of claim 5, wherein the moving mechanism includes an actuator and a gliding mechanism.

7. (Previously Presented) The package divert mechanism of claim 1, further comprising:

a frame member of the frame, a mounting mechanism of the moveable diverting mechanism, and a gliding mechanism extending from the frame member and connected to the mounting mechanism of the moveable diverting mechanism.

8. (Previously Presented) A package divert mechanism, comprising:

a frame adapted for use with an existing conveyor system for transporting an item in an original direction;

a moveable diverting mechanism extending from the frame member, the moveable diverting mechanism being movable substantially perpendicular to the original direction of travel of the item being transported on the existing conveyor system and diverting the item in either a first direction or a second opposing direction; and

an over current sensor for determining whether a current associated with an actuator exceeds a threshold limit,

wherein the moveable diverting mechanism further includes a moving

mechanism for moving the moveable diverting mechanism.

9. (Original) The package divert mechanism of claim 1, further comprising a plurality of sensors associated with the moveable diverting mechanism.

10. (Previously Presented) A package divert mechanism, comprising:
a modular frame adapted for use with an existing conveyor system for transporting an item in an original direction;
a moveable diverting mechanism extending from the modular frame, the moveable diverting mechanism being movable substantially perpendicular to the original direction of travel of the item being transported on the existing conveyor system and diverting the item in either a first direction or a second opposing direction; and
a plurality of sensors associated with the moveable diverting mechanism, wherein the plurality of sensors include:
at least one home sensor for detecting a home position of the moveable diverting mechanism; and
at least one over travel sensor for detecting an over travel position of the moveable diverting mechanism; and
a plurality of sensors associated with the modular frame for detecting a flow of the items entering an entrance of the modular frame and exiting an exit of the modular frame.

11. (Currently Amended) A package divert mechanism, comprising:
a frame adapted for use with an existing conveyor system for transporting an item in an original direction;
a moveable diverting mechanism extending from the frame, the moveable diverting mechanism being movable substantially perpendicular to the original direction of travel of the item being transported on the existing conveyor system and diverting the item in either a first direction or a second opposing direction; and

momentary contacts associated with a control box arranged on the frame which provide an input signal to control the movement of the moveable diverting mechanism; and

a control system that determines information from the item and predetermines a diverting direction for the item.

wherein the item is moved with the movable diverting mechanism in the first direction based on a first control signal and in the second direction based on a second control signal.

12. (Previously Presented) A package divert mechanism, comprising:
a frame member adapted for use with an existing conveyor system for transporting an item in an original direction;

a moveable diverting mechanism extending from the frame member, the moveable diverting mechanism being movable substantially perpendicular to the original direction of travel of the item being transported on the existing conveyor system and diverting the item in either a first direction or a second opposing direction; and

hoods having openings, the hoods being positioned at an entrance and each exit of the frame.

13. (Original) The package divert mechanism of claim 12, further comprising at least one interlock switch for detecting a position of the hoods and providing a signal to a controller for shutting down movement of the moveable diverting mechanism when any of the hoods are in an upright position.

14. (Currently Amended) A bidirectional divert mechanism, comprising:
a frame having first, second, third, and fourth frame members each connected to a fifth frame member;

the first and second frame members defining an entrance, the second and third frame members defining a first of a plurality of exits, the third and fourth frame members defining a second of the plurality of exits, and the fourth and first frame members

defining a third of the plurality of exits;

a gliding mechanism extending across the fifth frame member of the frame and adapted to move between opposing exits of the plurality of exits; and

a downward extending moveable blade member coupled to the gliding mechanism, the downward extending blade member having opposing blade surfaces to divert an item in either a first direction or a second direction opposing the first direction, and further having a longitudinal axis, the opposing blade surfaces facing opposing exits and the longitudinal axis extending in a direction between the entrance and another of the exits; and

a means for positioning the movable blade member in a static position allowing the item to pass through the bidirectional divert mechanism.

15. (Original) The bidirectional divert mechanism of claim 14, further comprising a series of sensors for monitoring or controlling actions of the downward extending moveable blade member.

16. (Original) The bi-directional divert mechanism of claim 15, wherein the series of sensors includes at least one of:

at least one home sensor for detecting a home position of the downward extending moveable blade member;

at least one over travel sensor for detecting an over travel position of the downward extending moveable blade member; at least one photosensor for detecting a flow of items;

an over current sensor for determining whether a current associated with an actuator of the downward extending moveable blade member exceeds a threshold limit; and

momentary contacts which provide an input signal to control the movement of the downward extending moveable blade member.

17. (Previously Presented) A package divert mechanism, comprising:
a frame having an entrance and a plurality of exits;
a gliding mechanism extending across a frame member of the frame and adapted to move between opposing exits of the plurality of exits;
a downward extending moveable single blade member coupled to the gliding mechanism, the downward extending single blade member having opposing blade surfaces and a longitudinal axis, the opposing blade surfaces facing opposing exits and the longitudinal axis extending in a direction between the entrance and another of the exits, and
a safety hood positioned at least at one of the entrance and exits of the frame;
and
a control system that determines information from an item and predetermines a diverting direction for the item.

18. (Currently Amended) A method of diverting an item, comprising:
locating a first home position and a second home position of a diverting mechanism having a blade;
allowing the blade to move within a frame having a plurality of vertical frame members which define a frame entrance and at least first and second frame exits which are arranged orthogonal to one another;
positioning the diverting mechanism at one of the first home position and the second home position;
determining a diverting direction of the item based on classification information associated with the item; and
controlling, with control signals received from a controller of a conveyor, the diverting mechanism in accordance with the diverting direction to divert an item in either the first frame exit or the second frame exit.

19. (Previously Presented) The method of claim 18, wherein the controlling includes:

moving the diverting mechanism in a first direction in order to divert the item in the first direction which is substantially perpendicular to an original direction of travel of the item;

moving the diverting mechanism in a second direction opposite the first direction;
and

allowing the diverting mechanism to remain stationary in order to allow the item to pass through unimpeded.

20. (Previously Presented) The method of claim 19, further comprising determining and allocating a new home position of the diverting mechanism after the controlling.

21. (Previously Presented) The method of claim 18, further comprising suspending movement of the diverting mechanism based on at least one of:

- a detection of an item being jammed;
- a detection of an item exceeding a threshold physical characteristic limit;
- a detection that the diverting mechanism exceeds a travel limit; and
- a detection that an operator has open access to the diverting mechanism.

22. (Previously Presented) A method of diverting an item, comprising:
locating a first home position and a second home position of a diverting mechanism;

positioning the diverting mechanism at one of the first home position and the second home position;

determining a diverting direction of the item based on classification information associated with the item; and

controlling the diverting mechanism in accordance with the diverting direction;
and

suspending the movement of the diverting mechanism based on at least one of:
a detection of an item being jammed;

a detection of an item exceeding a threshold physical characteristic limit;
a detection that the diverting mechanism exceeds a travel limit; and
a detection that an operator has open access to the diverting mechanism,
wherein the detection of the jammed item and the detection of the item
exceeding a threshold physical characteristic limit is based on a detection of an over
current of an actuator which moves the diverting mechanism.

23. (Cancelled)

24. (Previously Presented) The package divert mechanism of claim 1, wherein
the movable diverting mechanism includes a blade mechanism extending from the
frame member to divert the item in either the first direction or the second opposing
direction

25. (Previously Presented) The package divert mechanism of claim 8, wherein an
excessive current associated with the actuator indicates that the existing conveyor
system should be stopped.

26. (Previously Presented) The package divert mechanism of claim 1, wherein
the frame member includes a plurality of legs forming the entrance and the plurality of
exits, wherein:

a first leg and a second leg form the entrance;
a third leg and the first leg form a first exit of the plurality of exits, the first exit
being orthogonal to the entrance;
a fourth leg and the second leg form a second exit of the plurality of exits, the
second exit being orthogonal to the entrance; and
the third leg and the fourth leg form a third exit of the plurality of exits, the third
exit being in alignment with the entrance.

27. (Previously Presented) The package divert mechanism of claim 26, further comprising:

- a first hood mounted over the first exit via a first hinge;
- a second hood mounted over the second exit via a second hinge;
- a third hood having mounted over the third exit via a third hinge; and
- a fourth hood mounted over the entrance via a fourth hinge.

28. (New) The package divert mechanism of claim 1, further comprising a control system that determines information from the item and predetermines a diverting direction for the item, wherein the item is moved with the movable diverting mechanism in the first direction based on a first control signal and in the second direction based on a second control signal.

29. (New) The bidirectional divert mechanism of claim 14, further comprising a control system that determines information from the item and predetermines a diverting direction for the item, wherein the item is moved with the movable blade member in the first direction based on a first control signal and in the second direction based on a second control signal